

What is claimed is:

1. A carbohydrate-appended peptide useful for radioiodinating an antibody, comprising:
  - (a) a peptide that comprises at least one D-tyrosine, an amino terminus, a carboxy terminus formed from a D-lysine and no contiguous L-amino acids between the D-tyrosine and the carboxy terminus;
  - (b) a carbohydrate conjugated to the peptide via an  $\epsilon$ -amino group of the D-lysine to form a carbohydrate-appended peptide; and
  - (c) a linker group for covalently binding said aminopolycarboxylate-appended peptide to an antibody.
2. The carbohydrate-appended peptide of claim 1, further comprising a radioiodine atom covalently bound to the D-tyrosine residue.
3. The carbohydrate-appended peptide of claim 1, wherein said linker group is capable of reacting with a sulfhydryl residue of an antibody to form a covalent bond.
4. The carbohydrate-appended peptide of claim 1, wherein said peptide contains 5-40 amino acids.
5. The radioiodinated carbohydrate-appended peptide of claim 2, wherein said peptide contains 5-40 amino acids.
6. The carbohydrate-appended peptide of claim 1, wherein said D-tyrosine is directly linked to said D-lysine.
7. The carbohydrate-appended peptide of claim 1, wherein said carbohydrate is selected from the group consisting of melibiose and lactose.
8. The radioiodinated carbohydrate-appended peptide of claim 2, wherein said carbohydrate is selected from the group consisting of melibiose and lactose.

9. The carbohydrate-appended peptide of claim 1, wherein said carbohydrate is melibiose.

10. The radioiodinated carbohydrate-appended peptide of claim 2, wherein said carbohydrate is melibiose.

11. A method for producing a carbohydrate-appended peptide useful for radioiodinating an antibody, comprising:

conjugating a radioiodinatable peptide to a carbohydrate to form a carbohydrate-appended peptide;

wherein said radioiodinatable peptide comprises at least one D-tyrosine, an amino terminus, a carboxy terminus formed from a D-lysine and no contiguous L-amino acids between the D-tyrosine and the carboxy terminus.

12. A method according to claim 11, further comprising covalently reacting radioiodine with said at least one D-tyrosine to form a radioiodinated carbohydrate-appended peptide.

13. A method according to claim 11, wherein said carbohydrate is conjugated to said radioiodinatable peptide at an  $\epsilon$ -amino group of said D-lysine by reductive amination.

14. A method according to claim 11, wherein said peptide contains 5-40 amino acids.

15. A method according to claim 12, wherein said peptide contains 5-40 amino acids.

16. A method according to claim 11, wherein said D-tyrosine is directly linked to said D-lysine.

17. A method according to claim 11, wherein said carbohydrate is selected from the group consisting of melibiose and lactose.

18. A method according to claim 12, wherein said carbohydrate is selected from the group consisting of melibiose and lactose.

19. A method according to claim 11, wherein said carbohydrate is melibiose.

20. A method according to claim 12, wherein said carbohydrate is melibiose.

21. An antibody conjugate comprising the carbohydrate-appended peptide of claim 1 covalently bound to an antibody through said linker.

22. An antibody conjugate of claim 21, further comprising a radioiodine atom covalently bound to a D-tyrosine residue of said carbohydrate-appended peptide.